

SUEX® K Thin Dry Film Sheets (TDFS)

Thin SUEX® K film sheets are thin photoimageable epoxy sheets for wafer level packaging, MEMS and plating applications.

The sheets consist of a cationically cured modified epoxy photoresist between two throw-away layers of protective polyester film (PET). The epoxy photoresist formulation contains an antimony-free photoacid generator (PAG) and is prepared under a highly controlled solvent-less process, which provides uniform coatings. The solvent developed negative working photoresist is sensitive to UV radiation in the range of 350 – 375nm.

These sheets are based on the same formulation as our standard SUEX Thick Dry Film Sheets and are intended for applications where low-color and temperature stability are required.

Thin SUEX is compatible with and exhibits good adhesion to: Silicon, Silicon Nitride, Copper, Gold, Aluminum, glass, polymers and other metals and oxides.

Sheets are available in thicknesses that range from 20 to 75 µm and are pre-cut into standard wafer and panel sizes for lamination to the substrate. They are extremely easy to use and ready for lithographic processing in minutes.

Standard Thicknesses: 20, 30, 40, 50 and 75 µm

Precut Sheets: Round, wafer cut, square, rectangular or custom.

Precut Sizes: 48, 73, 96, 146, 196 and 296mm dia plus 48mm to 298mm sq and up to 500mmX600mm panels.

ENVIRONMENTAL, HEALTH AND SAFETY: Refer to our SUEX Series TDFS® Safety Data.

STORAGE: SUEX sheets should be stored in their original black packaging in a standard temperature controlled environment between 18°C (65°F) to 25°C (77°F). When stored under these conditions, the shelf life is more than 1 year from date of shipment.

Properties of Cured SUEX Films	Values	Measuring Method
Tg, DMA max tan δ	173°C	DMA
5% wt loss temp/Decomp onset	356 °C/398 °C	TGA
1%/hr decomp temp in N ₂	262 °C	TGA
CTE RT, α ₁ /α ₂ ppm	50, 63, 190	TMA
Shrinkage X/Y, Z	<1%	CD, FT loss
Residual stress, MPa	6 est*	Wafer Bow
Modulus, GPa	3.9	ASTM D3379-75, Dage tensile pull
Tensile Strength, Mpa	86	ASTM D3379-75, Dage tensile pull
Elongation	8%	ASTM D3379-75, Dage tensile pull
Bend Radius, cured 100µm film	<1 mm	spindle
Adhesion, MPa		
Si	70	
Cu	80	
Al/Cu	54	
Glass (borosilicate)	61	
Quartz	60	
Dielectric Constant	3.7	ASTM D150-98
Dielectric Loss, Tan δ	0.038	ASTM D150-98
Dielectric Strength, KV/mm	100	ASTM D149-97A/JIS C2110
Volume Resistivity, Ωcm	8.1X10 ¹⁵	ASTM D257-07
Surface Resistivity, Ωcm	2.2X10 ¹⁶	ASTM D257-07